

SYSTEM AND METHOD FOR ELECTROSTATIC DISCHARGE PROTECTION  
USING LATERAL PNP OR PMOS OR BOTH FOR SUBSTRATE BIASING

5     ABSTRACT OF THE DISCLOSURE

          The invention comprises a system and method for providing electrostatic discharge protection. In one embodiment of the invention, an integrated circuit (10) comprising at least one input element (20) is protected by  
10     a protective circuit (40). The protective circuit (40) is operable to protect the integrated circuit (10) from damage due to electrostatic discharge and may be coupled to the input element (20). The protective circuit (40) comprises a lateral NPN transistor (T1) coupled to the input element  
15     (20) and operable to activate when the input element voltage exceeds threshold, the threshold greater than or equal to the ordinary operating voltage of circuitry coupled to the input element (20). The protective circuit (40) also may comprise a lateral PNP transistor (T2)  
20     coupled to the input element (20) and to the lateral NPN transistor (T1). The lateral PNP transistor (T2) is operable to aid in raising a potential of the base of the lateral NPN transistor (T1). Alternatively, the protective circuit (40) also may use a PMOS transistor (P1), or a PMOS  
25     transistor (P1) in combination with the lateral NPN transistor (T1), coupled to the input element (20) and to the lateral NPN transistor (T1). The PMOS transistor (P1) is operable to aid in raising the potential of the base of the lateral NPN transistor (T1).